

Weekly Report

2017.12.04-2017.12.10

1.This Week

Summarization Form

Task	Progress	Time
Power Grid New Projects	Generate power flow data. List questions about the power flow program. Process the generated data into organized structure. Solve issues about missing topology.	February
Power Grid Visualization Survey	Gathering materials.	
VIS 2018 paper	Looking for event detection methods and .	4.1

Power Flow Project in Ningbo

- 1.Process the generated transient simulation data into organized structure.
- 2.Solve issues about missing topology and separated sub-graphs.
- 3.Generate power flow data from the program sent by Dr. Huang.
- 4.Summarize a list of questions about the power flow program.

Idea evaluation for VIS 2018 (Event Detection)

- 1.Consult Dr. Huang for event detection backgrounds in the electrical domain and assure that sequential event detection and analysis is an essential problem.
 - A single event can be defined as: <Time, Node, Type, Content>.
 - Challenges includes: multi-stage nature of sequential events, mutual influence from the neighborhood nodes, time difference analysis (advanced or delayed) between events.
 - Existed solutions: topic model (textual data), clustering methods, machine learning methods (SVM,OCCRF), statistical methods, KNN based methods etc..
- 2.Read papers about event detection and look for potential event detection methods to develop a new one.

3.Process with the 2,000 node data, generate transformer information and another 1,000 time points that conforms to a Gaussian Distribution in the front.

Visual Analysis for Large-scale power grids

1.Find methods to partition the power grid into different level of details (rather than simple clustering). We plan first to partition all buses into different areas to generate more concentrated topology. Sub-graphs of the concentrated areas are the second level of detail.

Papers

1.FluxFlow: Visual Analysis of Anomalous Information Spreading on Social Media

2.LeadLine: Interactive visual analysis of text data through event identification and exploration

3.E-Map: A Visual Analytics Approach for Exploring Significant Event Evolutions in Social Media

4.State-of-the-art report of visual analysis for event detection in text data streams

5.How hierarchical topics evolve in large text corpora.

6.Hierarchicaltopics: Visually exploring large text collections using topic hierarchies

2.TODO

1. other projects of power grid started.
2. VIS 2018 paper idea evaluation.